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Weekly Vegetable Update

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Regional Updates:

North Country—Clinton, Essex, northern Warren and Washington counties

Heavy rains gave fields a good soaking this week, perhaps a bit too much of a soaking. Over 3 inches fell in many areas last Monday. We have still managed to avoid any hail so far this season, except for a few isolated pockets. The recent rain was cool and steady, creating ideal conditions for late blight so growers need to be extra alert. All crops are coming on fast, we're at the peak of the season!



Growers know how much onions suffer from thrips, botrytis leaf blight and downy mildew but they also are easily damaged simply by pounding rain. Most of the damage to the onions in this photo, the white blotches on the bent over leaves, is from weather. As the tissue dies, secondary problems can develop but the initial problem here was heavy rain and wind.

Capital District—Albany, Fulton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, southern Warren and Washington counties

The weather has continued to push crops right along. Pumpkins and winter squash are setting nicely across the region, and with that comes the onset of powdery mildew in these crops. Scout near the crown to catch the first symptoms of this disease. We continue to see higher than usual levels of bacterial diseases on tomatoes, cucurbits, and peppers in particular. Copper is the only option available to slow the spread of disease. If you suspect you have a bacterial issue, please confirm with one of the specialists so we can advise you of sanitary measures to prevent a similar situation next year.



Barley dwarf mosaic virus on 'Vitality'.

Corn is looking pretty good, having received adequate moisture so far. There are a few issues popping up here and there, such as Barley Dwarf Mosaic Virus on susceptible varieties, and some feeding damage from the first flight of European Corn Borer. We are heading into second flight now, so scouting and spraying as tassels emerge is a priority once you reach threshold. See last week's newsletter for scouting procedures and action thresholds. Watch the trap catch table on the last page of the newsletter and also scout your fields, as populations can vary widely.



Copper burn on cantaloupe.

The hot temperatures of last week caused some issues with spray burn. When temperatures are high, products such as copper and sulfur can burn sensitive plants. This image is a cantaloupe plant that was sprayed with copper using a backpack sprayer.

Mid-Hudson Valley—Columbia, Dutchess, Greene, Orange and Ulster counties

Sweet corn harvest is very near peak output. Potato harvest is also "picking-up". Skins are still thin but sizes seem VERY nice. *Continued on next page*

Regional Update for Mid-Hudson Valley, continued from previous page

Downy Mildew is still a strong threat to brassicas. For a couple of weeks when temperatures were higher it seemed to have subsided but is now back in full-force. Be sure you're applying the correct fungicides for its control and rotating fungicide chemistries. A very useful tool is the Cornell Integrated Pest Management Guidelines which includes FRAC groups for all chemistries so that you get the correct rotations for every spray; see: <http://veg-guidelines.cce.cornell.edu/>. Different active ingredients may belong to the same FRAC group, meaning that they have the same mode of action. You want to change up the mode of action to avoid resistance!

We continue to see more incidences of **phytophthora** in peppers and one case in cucurbits. Meg McGrath, plant pathologist at the LI Research Center wrote a few weeks ago "It is worthwhile to pull blighted plants. If it is not feasible to remove these plants from the field, it can be helpful to drop them upside down so the pathogen is exposed to sunlight. For plants on beds covered with plastic mulch, cut the plastic between the diseased and healthy plants to prevent the pathogen from moving in the film of water on the underside of the plastic."

Unfortunately we continue to find bacterial canker and speck in tomatoes on more farms in the region. We are working closely with Chris Smart (veg pathologist at Cornell Geneva Experiment Station) to identify sources of inoculum and spread as well as best control strategies. It seems at this time, if canker or speck is present in your tomato field, that an aggressive copper spray program is essential to control fruit spotting. The very youngest fruitlets are most susceptible to spotting by these bacteria. Use the full rate of copper on the product label.

Cercospora on Greens:

Cercospora beticola can be found on beets, spinach and Swiss chard. This pathogen is favored by high humidity and temperatures between 75-85°F and is spread by rain splash, wind, irrigation water, insects, workers, and equipment. The long leaf wetness periods with the heavy dews and intermittent rains has increased its appearance in the past couple of weeks. Should it progress, it can not only make a crop unmarketable but can outright stunt and kill plants.

Symptoms start with a few reddish-purple round spots that grow. The center of the lesion is tan and papery. Lesions are the size of a pencil eraser or smaller. They can become quite numerous. As their numbers increase, they then coalesce. Sections of the leaf, often the edges, become grey/black. You may be able to see the sporulation on these areas. Leaves can curl and extensive infections cause defoliation.

The pathogen comes from crop residue, weed hosts, and/or seed. It can survive for a couple of years in soil. To minimize infections, reduce weed hosts on the farm and reduce the numbers of times you re-cut fields. Cut once, immediately disc and rotate to non-chenopodium crop. Chemical controls can also be effective. See the Guidelines and remember to rotate FRAC codes. -MRU



Cercospora on beet greens.

Courtesy of <http://extension.umass.edu/vegetable/sites/vegetable/files/articles/images/cercospora%20beet.jpg>

Downy Mildew on Onions???

No, it has not been identified by anyone in Orange County yet. But...the cool weather has me concerned. Only once, in all these years, have I seen it on onions in Orange County but I fear this year may be the next. It is a different DM than what attacks brassicas or cucurbits but does like similar weather. Keep an eye out, especially for those of you in the northern counties where the temps are even cooler, and be sure your fungicide program has the chemicals that help control it.

For more on DM see: http://vegetablemndonline.ppath.cornell.edu/factsheets/Onions_Downy.htm -MRU

Spores of downy mildew on an onion leaf.

Photo from Michigan State Univ. <http://msue.anr.msu.edu/uploads/images/7-15-11-MARY-downy-mildew-in-onions.jpg>



M. Hausbeck

Amy Ivy's Observations from the Field and High Tunnels



Close up of indeterminate Panzer tomato well trained to a single leader: staggered row, lower leaves removed, support clips all along the stem, good leaf color.



Photo by ADI

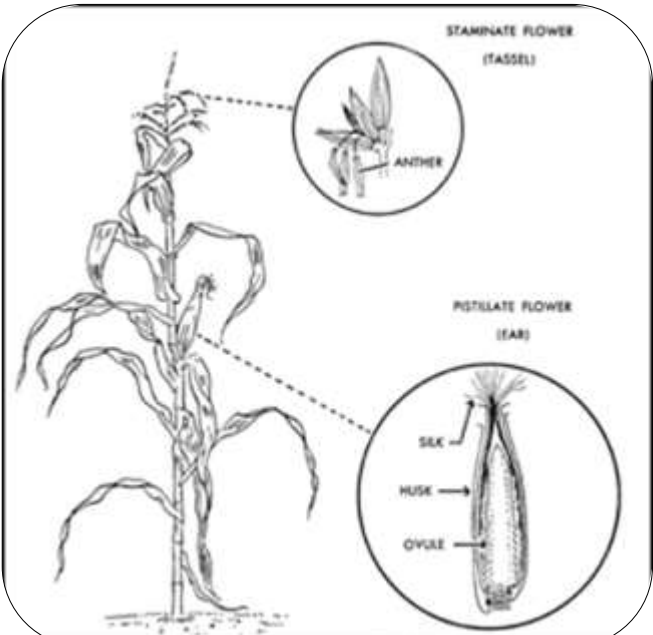
A beautifully managed high tunnel of tomatoes. Determinate Primo Red on the left with tall, sturdy stakes every 2 plants supported with the basket weave system, and indeterminate Panzer on the right, trained to a single leader. Both varieties are resistant to leaf mold and produce gorgeous tomatoes.

Photo by ADI

Who Gave my Corn Silk a Buzz Cut?

It's a fascinating fact of botany – each strand of silk on an ear of corn is attached to a single kernel of corn. When a pollen grain lands on a silk, the pollen follows the silk down to fertilize the developing kernel of corn. If all the silks are not pollinated, you'll end up with uneven pollination and uneven kernel development.

Corn earworm and Japanese beetles are two common pests of corn with a particular fondness for the silks. They chomp the silks down to short nubs, making fertilization impossible. -ADI



Poor pollination on an ear of corn.

Photo credit: www.extension.umn.edu



Young corn silk chewed off by Japanese beetles before pollination could occur.

Photo credit ADI



Japanese beetles feeding on corn silk. Photo credit ADI

Photo credit: www.aces.uiuc.edu

Guttation

Guttation (see photo) is when moisture is taken up through plant roots and forced out through the hydathodes along leaf margins. It most commonly occurs during the night. If you notice guttation on the leaves of your crops in your tunnels during the day it is a symptom of excess humidity. This photo was taken on a cool, rainy day last week when humidity inside and outside tunnel was high. There's not much a grower can do to alleviate high humidity during a rain event but it's helpful to know what's going on. Guttation is often confused with dew, which occurs when moisture in the air condenses onto plant tissue and other surfaces. Sometimes the drops of water from guttation will dry along the leaf margins leaving a visible residue. And sometimes, spores of common diseases such as early blight can be drawn into the interior tissue of the leaves as the hydathodes retract the moisture they exude.

If you notice guttation on your high tunnel crops when the weather is not rainy, it can be an indication that you need to improve your ventilation, to draw out the moisture laden air and bring in less humid air from outside. Many fungal diseases thrive in the film of water left on leaves from guttation and/or dew. -ADI



Drops of moisture developing along the leaf margins under conditions of high humidity is called 'guttation'. Photo by ADI

Recycling Agricultural Plastics Program - Empire Farm Days

Visit RAPP at Empire Farm Days, August 5-7, Booth #500

Cornell's Recycling Agricultural Plastics Program (RAPP) will be displaying its wares and showing how to recycle at Booth #500, just outside the main entrance to the Cornell Building (a.k.a. the Empire Building).

Learn how to operate a BigFoot plastics baler. RAPP is offering a free 1-hour baler-operator training course, 10-11am on each day of the show. This will be an hour well spent with trainees a giant step closer to receiving the required certification to operate a BigFoot plastics baler independently on their own farms. Participants will be given a free instructional DVD to reinforce what was taught. Pre-registration by July 22 is requested, but drop-ins will be welcome if space permits. To sign up, call RAPP at 607-255-1187 or email agplasticsrecycling@cornell.edu. For those who simply want to see the BigFoot work its magic, stop by at 2p.m. any day of the show for a demonstration. It's quite something to watch this baler transform a mountain of plastic into a dense, 1000-lb, four-foot cube in just about half an hour.

Best Management Practices. The trick to keeping plastic in shape for recycling is to keep it free of grit and gravel, and as clean and dry as is possible under farm conditions. Demonstrations of these 'best management practices' (BMPs) will be ongoing throughout the show, with specific tips on how to handle each type of farm plastic. BMPs and other recycling resources can also be found online at RAPP's website (coming soon!): agplasticsrecycling@cornell.edu or Facebook page: facebook.com/Recycling.Agricultural.Plastics.

What becomes of old plastic? Everyone wants to know what happens with old plastic once it is compacted and moved off the farm. The news is good: RAPP's partners in the recycling world are now able to process virtually all types of used farm plastics: bale wrap, bunker covers, mulch film, greenhouse plastic and more.

Some of this old plastic is turned into new products by manufacturers right here in New York State. The waste plastic becomes plastic 'plywood' boards, plastic sidewalk pavers, household and industrial-size garbage bags, and diesel fuel. Some is even made back into new plastic containers, films and twine that will once again be used on farms.

An array of these products, as well as supplies and equipment for storing and compacting used plastic will be showcased during Empire Farm Days at RAPP's Booth #500. Agricultural plastics recycling is taking off, big time!

QUESTIONS? Cornell NYS RAPP Office, 607-255-1187, agplasticsrecycling@cornell.edu
-OR- RAPP NYS Field Coordinator Nate Leonard, 607-255-8444 or 607-216-7242, nrl3@cornell.edu

FreshConnect Checks issued to Veterans

Press Release from NYS Department of Ag and Markets

Dear Market Manager,

This year for the first time a portion of the \$2.00 FreshConnect Checks have been issued to New York State Veterans and their families. We have been asked a few questions regarding the Veterans portion of the FreshConnect Checks Program. This note is to clarify and respond to these questions.

Veterans and their families will be receiving FreshConnect Checks *identical to* the checks handed out to supplement SNAP purchases at markets with EBT terminals that have elected to participate in the FreshConnect Checks Program.

The FreshConnect Checks issued to Veterans may be used at any farmers market in the FMNP network. This includes all markets that have applied to the FMNP this season. The Veterans have been given a list of these market with their checks.

The FreshConnect Checks may be used to purchase all SNAP eligible foods from vendors at the market(s).

For reimbursement the FreshConnect Checks should be sent to Farmers Market Federation at the address on the back of the check: 117 Highbridge Street Suite U3, Fayetteville, NY 13066

All vendors submitting checks should include a FreshConnect Check Redemption Form with their checks submitted for reimbursement.

Farmers currently registered for the FMNP should stamp the checks with their FMNP stamp. Farmers and vendors not in the FMNP should sign or initial their checks.

A list of eligible foods can be found online: www.fns.usda.gov/snap/eligible-food-items

Rules and regulations for farmers and vendors can be found online www.agriculture.ny.gov/AP/agservices/fcp/Rules_for_Farmer_Vendor.pdf

All farmers and vendors submitting checks for reimbursement should include a Fresh Connect Redemption Form.

The redemption form (example below) can be found online: www.agriculture.ny.gov/AP/agservices/fcp/Redemption_Form.pdf

FreshConnect Check Redemption Form

FMNP Farmer Number: _____ (if applicable)

Farmer Name: _____

Check payable to: _____

Address: _____

Phone: _____ Date: _____

For confirmation of receipt, provide email address: _____

Number of Checks enclosed: _____

For additional questions contact:
Jacqueline Boyer, 518-457-6880 or email Jacqueline.Boyer@agriculture.ny.gov
Sarah Johnson, 518 457-1721 or email Sarah.Johnson@agriculture.ny.gov

SAMPLE Redemption form front (at top) and back (at bottom).

[Click here](#) for a complete printable form.

FreshConnect Check Redemption Form

Stamp the face of each Check with your current FMNP endorsement stamp (if applicable). Redemptions may be made monthly or at the end of the season. Final redemptions must be postmarked no later than **December 15, 2014** to guarantee reimbursement.

Complete this redemption form and mail with your stamped Checks to:

Farmers' Market Federation of New York
 117 Highbridge St, Suite U3
 Fayetteville, NY 13066

Late Harvest Planting Time is Now

By Robert Hadad, CCE Cornell Vegetable Program

If you aren't busy enough, now is the time to get that last planting in for late season harvests. Local micro-climates may vary dates slightly but for this week you want to get in:

- Beans, snap
- Cabbage (medium) from transplants
- Carrots
- Cauliflower (late) from transplants
- Chinese cabbage
- Cucumbers
- Fava beans
- Fennel
- Lettuce, head and romaine
- Onions, green
- Parsley
- Parsnip
- Rutabagas
- Squash, zucchini and summer
- Sweet corn (short maturity dates)

By the end of the month, these types of vegetables need to be in the ground:

- Beets
- Broccoli (late types) transplants
- Cabbage (early types) transplants
- Collards
- Endive
- Escarole
- Kale
- Kohlrabi
- Lettuce Boston, Bibb,
- Peas
- Radish, daikon, winter black, watermelon
- Swiss chard

Ideally put these late season marketed crops in their own section of the field. It makes management easier to accomplish. If you need to use row cover to protect from frost or capture heat, they are all in the same place. This also allows for fall clean up in the rest of the field easier with these crops out of the way. Late season weeds, aphids, and slugs can be a problem so regular scouting and maintenance is required.

Onion Maturity Considerations for Fresh-Market Growers

Fresh market onion growers, who often have at least a few varieties of onions, can sometimes struggle with knowing if the time is right to harvest the crop. Working by the calendar alone can mean harvesting too early or too late, both of which can increase disease incidence. Onions have many different days to maturity, but they all go through a similar process to reach full maturity. Here are some things to look for.

First, the necks will soften. Even before the tops go down on your onions, the neck will begin to soften an inch or two above the ground. This softening signals that cell division has stopped and cells are only expanding. Since onions closely resemble water balloons in their makeup (but with more tears when you throw them at people) irrigation at this stage is still very important to reaching final weight. However, it is estimated that onions use only about half the water at this stage that they do when actively growing. Adjust irrigation to keep soils near field moisture capacity, but not saturated. This stage will generally last 7-10 days.

Next, the tops will start to fall. This process can happen very quickly, or can take a while, depending on variety, weather, and if nitrogen fertilization was stopped in a

timely fashion. The point where the necks soften has now become soft enough that the tops fall over. During this stage you want to stop irrigating the crop, and let it mature without gaining more weight. A conservative recommendation would be to stop irrigating when 30% of the tops are down. Allowing the soil to dry will prevent diseases like black mold and sour skin from being as severe as they would be in wet soil. Bulbs from this point forward will continue to swell some 20-50% while the roots are still intact.

Some of the onions may never fall over. If the necks are soft you can bend them over manually, but if they are still hard and the onions are actively growing, folding over the tops will not help the onions to dry. Over-fertilized onions in particular may just keep growing, and will not mature properly. These onions will not store well, and should be sold fresh. Onions which suffer heavy disease loads may “die standing up”. This is particularly disconcerting and likely will be a significant problem in storage.



Cutting into an onion bulb with a little give reveals a layer with bacterial soft rot. Photo by CLS

The onions will continue to mature after the tops are down: The top of the onion will continue to fill, going from

Continued on next page

Onion Maturity Considerations, continued from previous page
 sunken or fleshy on top to firm and round in those onions which are going to store well (as mentioned, a few will never reach this point). You can leave them in the ground with the tops down to finish up this process. Besides feeling for round, full tops to the onion bulb, you can also watch for the outer leaves to lose excess moisture around the bulb and above ground. This is another sign that the bulbs are becoming mature. Figuring out how long this process should be is tricky in the northeast, where we cannot control our moisture all that well. Periods of very wet weather can certainly cause more disease problems at this time, so deciding to let onions continue to mature or pulling them and getting them inside to dry is tough. Sometimes there is no great answer, and you are choosing the best of a few not-so-good options.

Onions may be windrowed in the field for a short period of time. If we are heading into a dry period, windrowing the onions in the field for a few days to let the roots dry down and to move some moisture from the tops is an acceptable practice. If the weather will be wet or if you have excellent

air movement in your drying area and aren't worried about getting excess moisture out of your structure, you can move them right away. Do not harvest and lay out in the sun on days with extremely high UV or temperatures over 90 as the freshly-pulled bulbs can suffer sunburn.

As you are harvesting, field grade the onions. As you are bringing in onions, try to remove those that will not store. This gives you the option to either sell them right away, as in the case of those that are not maturing, or to save yourself the extra labor of moving onions that will never keep, as in the case of onions with bacterial soft rots. Train yourself and your workers to feel each onion as it is brought in from the field. Push on the area around the neck, squeeze the bulb. Cut 10 onions in half that feel a little different so you can see what is happening inside. If the ones with sunken or softer tops are just not quite mature, but have no disease, you could grade them out into a "sell first" pile. If the softness indicates that there is soft rot in the bulb, keep practicing this exercise until everyone can grade most of the bad onions. Leave those in the field. -CLS

Sweet Corn Pest Report

By Peter Jentsch, Cornell University
 Department of Entomology

The number of European corn borer adults caught in our New Paltz traps was high this week and indicates the typical seasonal increase of the second flight. Corn earworm and Fall armyworm adult populations remain low and suggest a 5 – 6 day spray schedule (see table below).

Western Bean Cutworm (WBC): WBC adults have been caught in our New Paltz and Warwick traps for the past two weeks. Though the numbers are low, scouting for egg masses is recommended in fields that are in the whorl or early tassel stage. A 1% threshold is recommended for fresh market sweet corn. WBC will usually lay eggs on the upper side of the top 1-3 leaves of pre-tassel corn, close to the leaf base. After tasseling has finished WBC seek out younger corn. To scout for egg masses check the top 3 leaves of ten corn plants in ten locations throughout the field. The eggs are easy to observe if you view the leaf while holding it towards the sun. The egg mass will appear as a distinct shadow (see photo above left).

It takes between 5-7 days for eggs to hatch. It is critical that sprays are timed before the larvae have a chance to enter the ear. The egg mass will become purple in color approximately 24 hours before egg hatch (see photo above right).



WBC egg mass (early stage).



WBC eggs (late stage)

Average Corn Earworm Pheromone Catch			
<u>Per Day</u>	<u>Per Five Days</u>	<u>Per Week</u>	<u>Days Between Sprays</u>
<0.2	<1.0	<1.4	No Spray (for CEW)
0.2-0.5	1.0-2.5	1.4-3.5	6 days
0.5-1.0	2.5-5.0	3.5-7.0	5 days
1-13	5-65	7-91	4 days
over 13	over 65	over 91	3 days

Sweet Corn Trap Catches for the Week Ending July 27th					
Location	ECB-E	ECB-Z	Corn Earworm	Fall Armyworm	W. Bean Cutworm
Albany	3	0	1	0	1
C. Clinton	0	0	0	30	1
S. Clinton	0	0	0	0	2
Fulton	0	0	0	0	1
Orange	0	0	0	7	0
Saratoga	0	0	N/A	N/A	N/A
Schoharie	2	1	2	0	0
C. Ulster	5	8	2	4	1
N. Ulster	8	3	6	0	0
C. Washington	0	1	N/A	0	0
N. Washington	8	0	0	0	0

2014 Weather Table—This chart is compiled using the data collected by Northeast Weather Association (NEWA) weather stations. For more information on NEWA and a list of sites, visit <http://newa.cornell.edu/> This site has information not only on weather, but insect and disease forecasting tools that are free to use.

2014 Weekly and Seasonal Weather Information						
Site	Growing Degree Information Base 50 ^o F			Rainfall Accumulations		
	2014 Weekly Total 7/21- 7/27	2014 Season Total 3/1 - 7/27	2013 Season Total 3/1 - 7/27	2014 Weekly Rainfall 7/21- 7/27 (inches)	2014 Season Rainfall 3/1 - 7/27 (inches)	2013 Total Rainfall 3/1 - 7/27 (inches)
Albany	165.6	1578.2	1591.0	1.43	7.39	23.70
Castleton	159.7	1493.6	1606.8	0.94	8.61	22.20
Clifton Park	155.4	1429.6	1516.1	0.95	9.26	24.53
Clintondale	161.5	1597.7	1729.7	0.35	10.18	15.24
Glens Falls	144.1	1418.6	1377.5	0.77	10.94	19.70
Guilderland	155.0	1436.5	1519.0	N/A	N/A	N/A
Highland	155.9	1585.1	1710.4	0.51	11.61	18.28
Hudson	166.9	1600.9	1676.6	1.07	9.83	17.95
Marlboro	157.9	1523.3	1651.5	0.38	12.78	19.60
Montgomery	155.6	1552.4	1618.5	0.27	14.46	17.95
Monticello	129.6	1710.4	1303.5	N/A	N/A	N/A
Peru	144.5	1349.6	1381.7	1.74	10.13	17.73
Shoreham, VT	151.1	1408.2	1473.4	1.19	9.22	19.15
Wilsboro	138.5	1296.3	1357.2	N/A	N/A	20.01

Cornell Cooperative Extension and the staff assume no liability for the effectiveness of results of any chemicals for pesticide use. No endorsement of any products is made or implied. Every effort has been made to provide correct, complete, and current pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly and human errors are still possible. These recommendations are not substitutes for pesticide labeling. Please read the label before applying any pesticide. Where trade names are used, no discrimination is intended and no endorsement is implied by Cornell Cooperative Extension.

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